

Volume 1



ISSN: 977 2460233 113

PROCEEDING

The 1st International Conference of Elementary School Teacher Education (ICESTE)

October 12-13rd, 2015 - Jakarta, Indonesia



RMIT
UNIVERSITY



**UNIVERSITY OF
SWAZILAND**

Published by:

**Elementary School Teacher Education Department
The State University of Jakarta**

**Proceedings of the 1st International Conference on Elementary School
Teacher Education (ICESTE)**

Copyright © 2015 by the Elementary School Teacher Education Department
The State University of Jakarta

*All rights reserved. No part of this book may be reproduced in any form or by any
means without permission of the Elementary School Teacher Education Department
The State University of Jakarta*

Elementary School Teacher Education Department
The State University of Jakarta
Setiabudi Street I Number 1 South Jakarta 12910, Indonesia
Phone & Fax: 62215254912
Email: iceste2015@gmail.com

ISSN: 977 2460233 113



Manufactured in Indonesia

PREFACE

Welcome to the *Proceedings* of the 1st international conference on Elementary School Teacher Education (ICESTE). In accordance with facing the globalization era in order to win the competition, it is important to carry out international conference. ICESTE is the first international conference conducted by Elementary School Teacher Education Department of the Faculty of Education in the State University of Jakarta. Hopefully, ICESTE will be continued annually in order to broaden audiences' international horizons about elementary school teacher education leading to get international education especially for the State University of Jakarta.

The aim of ICESTE is to give opportunities for academicians, researchers, and professionals from all over the world to share their research findings and development activities. At ICESTE, the delegates can exchange their new ideas and experiences and develop international collaboration research among them.

ICESTE provide opportunities to bring the new technologies and horizons to improve the quality of Elementary School Teacher Education in the world. Some international guest speakers representing academicians from different countries will speak on a range of topical issues and future prospects on Elementary School Teacher Education.

Please enjoy the chance of comparing and exchanging ideas at ICESTE.

Dr. Ir. Anita Marini, ME

The State University of Jakarta

1st ANNUAL CONFERENCE COMMITTEE

Steering Committee :

Rector The State University of Jakarta : Prof. Dr. Djaali

Dean of Educational Faculty : Dr. Sofia Hartati, M.Si

Chairman of Elementary School Teacher Education Department :

Dra. Maratun Nafiah, M.Pd

Organizing Committee :

Chairperson of Organizing Committee :

Dr. Arita Marini, ME

Dr. Fahrurrozi, M.Pd

Secretary :

Dr. Ajat Sudrajat, M.Pd

Advisor :

Prof. Dr. Zulela MS

Reviewer :

Dr. Arita Marini, ME

Dr. M. Syarif Sumantri, M.Pd

Dr. Herlina, M.Pd

Dr. Yurniwati, M.Pd

Secretariat Team :

Dr. Yurniwati, M.Pd

Ika Lestari, S.Pd., M.Si

Yustia Suntari, M.Pd

**DEVELOPING GAMES OF ADVENTURE "SI BOLANG" AS THEMATIC
LEARNING MEDIA TO IMPROVE STUDENTS' MOTIVATIONS AND
LEARNING ACHIEVEMENTS FOR STUDENTS GRADE V AT ELEMENTARY
SCHOOLS**

Sunarti

Yogyakarta PGRI University, Central Java, Indonesia

E-mail: bunartisadja@gmail.com

Adventure game "Si Bolang" as the thematic learning media developed is specifically for Elementary School Students. This study aims to develop of interesting learning media based on the games and know the differences of motivation and learning achievements with the games media. This study used of R&D method. Data collection instruments used were questionnaires and tests. The data were analyzed using inferensial statistic *Mann-Whitney U-Test*. The results show that (1) The development of an interesting game media is done by developing the design Bolang adventure games. (2) There is no significant difference in students' learning achievement with the media game and picture (3) There are significant differences in students' motivation with game and picture media (4) Media game is more effective to increase the motivation in comparison to picture media.

Keywords: adventure game "Si Bolang", students' learning achievement, students' motivation

ADVENTURE GAME DEVELOPMENT "Si Bolang" AS THEMATIC LEARNING MEDIA TO IMPROVE STINDENTS' MOTIVATIONS AND LEARNING ACHIEVEMENT FOR STUDENT GRADE V AT ELEMENTARY SCHOOL

Sunartii

PGRI University of Yogyakarta (e-mail: bunartisadja@gmail.com)

Abstract

Abstract: Adventure Game "Si Bolang" as the thematic learning media developed is specifically for Elementary School Students. This study aims to develop of interesting learning media based on the games and know the differences of motivation and learning achievements with the games media. This study used of R & D method. Data collection instruments used were questionnaires and tests. The data were analyzed using inferensial statistic *Mann-Whitney U-Test*. The results show that (1) The development of an interesting game media is done by developing the design Bolang adventure game. (2) There is no significant difference in students' learning achievement with the media game and picture (3) There are significant differences in students' motivation with game and picture media (4) Media game is more effective to increase the motivation in comparison to picture media.

Keywords: adventure game "Si Bolang", students' learning achievement, students' motivation

1. Introduction

Implementation of learning in elementary school (SD), which according to 2013 curriculum began to be implemented simultaneously in all SDs in Yogyakarta this year. 2013 curriculum to accommodate the balance between soft and hard skills, the skills which includes aspects of competence attitudes, skills and knowledge. Competencies are developed through an integrated thematic learning with a scientific approach. Integrated thematic learning is a learning approach that integrates the various competences of various subjects in various themes. Learners do not learn the basic concepts in partial but learning it intact as reflected in the various themes available.

The emphasis of 2013 curriculum is to encourage learners or students, better in observations, ask questions, reasoning, and communicate (present), what they earn or they know after receiving learning materials. The object of the arrangement and refinement of learning in 2013 curriculum are emphasizes the natural phenomena, social, arts, and culture. Through this approach we expected student attitudes competence, skills, and knowledge are much better. They will be more creative, innovative, and more productive, so they can be successful in dealing with various problems and challenges in his day, entering a better future.

In this globalization era, people's lives all over the country converge without knowing the boundaries of the physical, geographical and social.

Information and Communication Technology (ICT) in the future will be very important. Moreover the introduction of information and communication technology as early as possible to students are important things to do to face the challenges of the future.

Unfortunately the concept of thematic learning in elementary school are still not utilizing information and communication technology. Based on observations in several public and private elementary school in of Yogyakarta, almost all teachers implement the 2013 curriculum which refers to thematic book of 2013 curriculum where the book there is no implementation of learning using ICT.

The application of 2013 curriculum, teachers as facilitators can create thematic learning in ICT-based SDs in order to learn the theme becomes more fun, easy and not boring, to increase the interest and motivation of students in studying the theme. ICT-based learning application that could be used as alternative media. In use of ICT, according Sudjana and Riva (2005: 44), there are several models of computer assisted learning, as follows.

1. Training and practice model (drill and practice),
2. Tutorial Model (tutorials),
3. Discovery Model (problem solving),
4. Simulations Model (simulations), and
5. Game Model (games).

Implementation of thematic learning with the use of ICT has not been done by elementary school teachers in Yogyakarta, because teachers are

still adapting to implement appropriate learning of 2013 curriculum. Teachers assume that the primary thematic book is the only reference to carry out the study. Whereas in 2013 curriculum the use of the model curriculum of learning and creative learning media is highly recommended to improve achievement and student motivation.

According to Sumadi Suryabrata (2006: 297), the achievements can be defined as the value of the final formulation that can be administered by teachers as a progress / student achievement during a certain period. Thus, the achievement is the result of students during certain activities.

According to Ngali Purwanto (2010: 107), the factors that affect the learning achievement are:

a) internal factor

Is composed of physiological factors. Physiological factors is the physical condition and the condition of the five senses. While psychological factors, are talent, enthusiasm, intelligence, achievement motivation and cognitive ability.

b) External factor

Consisting of environmental factors and instrumental factors. Environmental factors are the social environment and the natural environment. While the instrumental factors curricula, materials, teachers, facilities, administration, and management.

Based on the theory above, the use of instructional media can also affect student achievement. Instructional media is the external factors or instrumental factor.

While the definition of motivation according to Hamzah B. Uno (2006: 1), is the impetus that exist within the individual that can drive someone to do something. Actions or measure based on specific motivations and aims in accordance with the motivation underlying the act. Sardiman (2003: 87) divide motivations into two types: intrinsic motivation and extrinsic motivation can be defined as follows:

1. Intrinsic motivation is the motives that become active the function do not need to be stimulated from the outside within the individual has no urge to do something.

2. Extrinsic motivation are are active motives and functioning due to stimulus from the outside.

Ahmad Rohani (1990: 12) argues "the general student will be stimulated to learn when he saw that the situation of the subject according to their interest".

So based on the explanation above, the motivation to learn is the impetus that exist within the individual to carry out learning activities. This motivation to learn can be enhanced with a fillip from the outside to make a learning situation interesting, by using an interesting learning media.

Media is a component of learning resources or physical vehicle containing instructional

materials in the environment of the learners that can stimulate learners to learn (Azhar Arsyad, 2010: 3). According Mulyani Sumantri (2001: 154) learning media serves as a tool to apply learning situations effectively, an integral part of the overall situation of teaching, laying the foundations of concrete from abstract concepts so as to reduce understanding the verbal and the motivation of learners. Related to the explanation above, the use of appropriate and engaging learning media can serve to improve student achievement and motivation.

Recently, especially in urban areas children are very like modern games such as video games, playstation, and online games. According Anggra (2008: vii) a game or a play is something that can be played by certain rules so that there are no winners and no losers, usually in the context of informal with the purpose of refreshing. The technology is developing very fast, but any sophisticated tools or devices that we hold, goodness or badness is dependent users. The same thing applies to the game. Games can actually be used as a medium of learning that very interesting for elementary students.

According Seels and Glasgow (1990: 181-183) grouping various types of media when viewed in terms of technological development by divided into two broad categories, that are traditional media choice and the choice of advance technology media. In the choice of advance technology media microprocessor-based media, one of the example is a computer game or a game Education. According to Hurd and Jenuings (2009: 5) Education games are the games that is specifically designed to teach the user a certain learning, concept development and understanding also guiding them to practice their skills, and to motivate them to play. Game should have interactive interface design and an element of fun.

Therefore no teacher who use game as a media of interesting thematic learning for elementary students. On the basis of the above reasoning researchers want to develop a game animation as a media of thematic learning interesting for students. In order the research on "Development of game-based learning media thematic animation to increase motivation and student achievement fifth grade elementary school" is very important to do. This study can be used as a basic for teachers in the use of ICT in thematic learning.

2. Methods

The type of this research is the development research (research and development / R & D), which is a series of processes or steps in order to develop a new product or improve existing products in order to be accountable. Instructional media development research procedures. Broadly

speaking, the development model used in this study can be seen in the following figure.

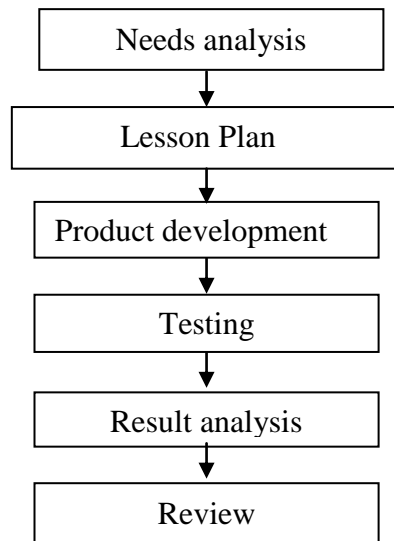


Figure 1 Steps of Media Development Research

Based on the above development model, the procedures for implementing the research development of the bolang media adventure game are:

- a. **Needs Analysis** to gather relevant information related to the importance of media development.
- b. Lesson Plan to make draft of media creation.
- c. Product development to manufacture of media based learning design has been created.
- d. Trial Products to evaluate the efficiency and differences between conventional learning and learning with the Bolang media adventure game. Product trials conducted in class VA SD in Kasihan district.
- e. The results of the analysis carried out by the effectiveness test which is a statistical test with SPSS.
- f. Review to review the learning device and then revise if any input and suggestions obtained.

Design trials are used based on experiments, comparing the group using the media adventure of Bolang game and groups using picture media. Subject research trial is a fifth grade elementary school students in Kasihan Bantul academic year 2014/2015. The population in this study is elementary in Kasihan that use 2013 the curriculum. The sampling technique in this study using purposive sampling technique. Samples were selected based on the goal of SD which use 2013 curriculum and has a computer lab. Thus, the samples in this study are students of class V SD N 2 Padokan and SD Muhammadiyah Ambarbinangun.

The instrument used in this study are: a questionnaire and tests. Motivation questionnaire to assess the effectiveness of the media, by comparing the level of student motivation by using media picture and the level of motivation by using the Bolang media adventure game. The test is used to determine the completeness of the thematic study using media picture and using the media Bolang adventure game. Test for thematic learning consists of Indonesian and Civics subjects.

The data analysis technique used in this study are

1. Validity and Reliability Analysis Test as a tool of Gauge Success Research

In this study, the test is not only validated by expert judgment but also carried out a validation point that see the validity of using the product moment correlation. Reliability analysis is done by using Cronbach Alpha.

2. Analysis of the effectiveness of product

Data analysis techniques used in measuring the effectiveness of this product is a hypothesis testing inferential statistical quantitative analysis techniques. Before the test of hypothesis, previously tested the first prerequisite. Prerequisite test is done to determine whether the data results of the study tested the statistics parametric or non-parametric. Prerequisite test used is normality test homogeneity test.

After testing the prerequisites, it can be determined what type of statistical test to be used to know the difference. If the data has a normal distribution and homogeneous variance, it can be done parametric statistical test of independent test with sample t-test. Meanwhile, if the data does not qualify as a homogeneous variation, then tested the non-parametric statistical test with Mann-Whitney U-test.

The hypothesis in this study are:

1. The effect of Bolang adventure game media on achievement

Ho: There is no difference in learning achievement by using media adventure game si Bolang

Ha: There is a difference in learning achievement using the media adventure game Bolang

2. The effect of adventure game media on motivation

Ho: There is no difference in motivation to study by using Bolang adventure game media

Ha: There is a difference of motivation to learn using si Bolang adventure game

To make decisions about testing the difference can be seen from the value of its significance. When the significance value smaller than the α (0.05), then Ho is rejected. It means that there are significant differences between the learning outcomes with the Bolang media adventure game and by learning with media picture.

However, the use of computers is also not effective in improving student achievement and motivation.

3. Research Result

1. Needs Analysis

a. Condition and potential Schools

SD of Ambarbinangun Muhammadiyah Bantul is a school that has enough infrastructures of learning including learning media. His laboratory is inadequate because it only has seven computer units. However there are 3 units of computers were damaged. Two-dimensional and 3 D media of learning and teaching quite fulfill. However, in its use still needs to be optimized because some teachers are less able to operate it. SD of Muhammadiyah Ambarbinangun is in the middle of the village flanked by two public school, but the public interest to put their children to SD Muhammadiyah Ambarbinangun which incidentally a private school, is still quite high. SD Muhammadiyah Ambarbinangun has a best UASBN score in academic year 2009/2010 in Kasihan. SD Muhammadiyah Ambarbinangun is a school that can be categorized as a favorite school. The number of students who go there quite a lot.

Therefore the teacher at SD Muhammadiyah Ambarbinangun has a proud achievement in the competition of Classroom Action Research (PTK), and a writing competition learning innovation national level. So it can be concluded that teachers in SD Muhammadiyah Ambarbinangun has run the learning process by using innovative methods and media.

While at SDN 2 Padokan, infrastructure or facilities are very complete, there are two computer laboratories and each contained 23 units of the computer lab. And learning media contained in SDN 2 Padokan also quite complete.

SDN 2 Padokan is the most favorite school in Kasihan, Bantul because it has complete facilities. Students whose interest study at SDN 2 Padokan are very much, so the classes are open until 3 parallel. Teacher at SDN 2 Padokan in delivering a learning highly innovative and using learning media and computer. Each class at SDN 2 Padokan has a quota for laboratory use.

b. Problem

SD Muhammadiyah Ambarbinangun and SDN 2 Padokan has teachers who are very innovative in learning both in the use of methods and media. SDN 2 Padokan even been using computers in the learning media. However, the use of computers in both the elementary school only in the form of computer assisted learning model with tutorials and practice the use of computer models.

2. Lesson Plan

In making a game based learning media education, as an early stage, researchers determined the themes in thematic learning appropriate to apply game-based media education. The theme that the researchers chose is a theme that is the history of civilization Indonesia 7 Sub-theme 1 Kingdom of Islam in Indonesia. The theme was chosen because the theme has quite a lot of theories that would be more interesting if learning using gaming media education. The material the researchers have developed is Civilization History Islamic kingdom. To assess the success of the media developed researchers also developed a measuring instrument tests and questionnaires motivation. Measurement of success in this research are tests and motivation questionnaire, and then tested the validity and reliability to determine the validity and reliability of research data.

a. Validity Test

In this study the validity of the tests conducted with validity content (construct validity) and construction validity (construct validity). Content validity refers to the sense of whether this test has parallels (in accordance with) the purpose and description of the material taught. The validity concept (construct) refers to the notion that if the tests were prepared in accordance with the concept of science to be tested. In this study, the test instrument and motivation questionnaire validated to the experts to determine those items such tests are feasible to measure the effectiveness of instructional media learning achievement Si Bolang adventure game.

In addition to content and construct validity, test questions will also be on the empirical validity test to test the validity of test items of research. Validity in this study were tested with Product Moment Correlation formula, this test is done by looking at the correlation / scores each question item. If $r_{xy} > r_{table}$ the significant level of 5% means the item (items) is valid and contrary $r_{xy} < r_{table}$ then the item is not valid and has no requirements.

Test instrument in this study conducted in class V SD N 2 Padokan and SD Muhammadiyah Ambarbinangun. Total students used in the trials of this instrument are 43 students. Based on the results of processing with SPSS shows that there are 5 items which have a value greater than 0.05 significansi namely item number 2, 5, 7, 11, and 13.

That five items are not valid so that the next research phase of the item is not used to analyzed.

b. Reliability Test

Reliability refers to a sense of whether a test can measure consistently something that will be measured from time to time. Measurements carried out using a questionnaire reliability of Cronbach alpha reliability coefficient. Criteria for reliability estimation are as follows.

Table 7. Reliability index

No	Reliability coefficient	Reliability rate
1	0,800-1,000	Very high
2	0,600-0,799	High
3	0,400-0,599	Enough
4	0,200-0,399	Low
5	0,00-0,199	Very low

In this study, the reliability is analyzed using software SPSS version 16.0 for Windows. Reliability test performed by using Cronbach Alpha test. Instrument reliability testing is performed with a significance level of 5%. The summary of the test results validity in this study is 0.594. The Alpha value is in the range of .400 to .599 means the instrument having sufficient reliability. From this analysis it can be concluded that the 15-point test is valid and reliable.

3. Instructional Media Design

a. Early Design Of Learning Media

Early design of media is a start page / cover / cover of instructional media. Cover designs created with the purpose to adjust and adapt to potential users of the learning media.



Figure 4.1. Early Design Media

b. Introduction of Figures Display Design

On this page, in addition to Bolang figure will be introduced several characters who play a major role in each of the kingdoms of Islam in Indonesia and good figures from Dutch colonizers, the Portuguese and the British.

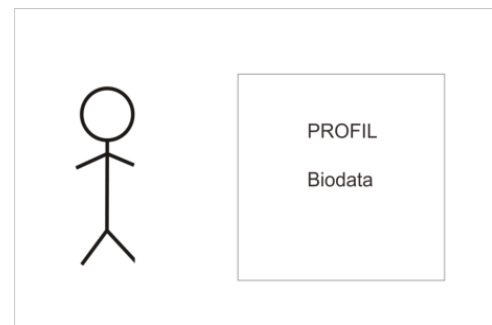


Figure 4.2. Introduction of Figures Display Design

c. Home Display Design

Early design of media is a start page / cover / cover of instructional media. Cover designs created with the purpose to adjust and adapt to potential users of the learning media.

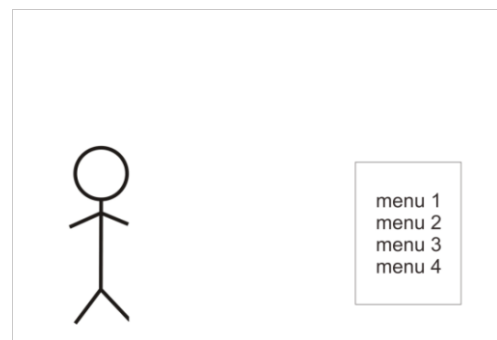


Figure 4.3. Home Display Design

d. Map Adventure Design

On this page, users will be invited by the Bolang adventure accordance circuitry existing maps to show the location and history of the Kingdom of Islam in Indonesia including Sumatra Island (Ocean Pasai, Kasultanaan Aceh), Java (Sultanate Pajang, Sultanate of Banten, Ancient Mataram, Mataram Demak) and Sulawesi Island (Kingdom of Makasar).



Figure 4.4. Map Adventure Design

e. Material Display Design

On this page, the user will be given in the form of written and audio material which is provided to adjust the chosen material (material of 8 Kingdom of Islam in Indonesia) and adjust the route of the Bolang in the adventure. On this page there are two characters who are the battle scenes which are Bolang and invaders figure.

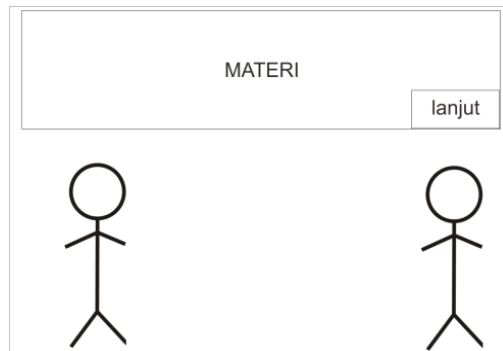


Figure 4.5. Material Display Design

not answer, then the system will automatically move to the next question. However, if the user has answered the question, then the button will be changed to next. So, this evaluation is used in addition to hone students' memory and also to hone the skills and speed of students in speed answer and use ICT.

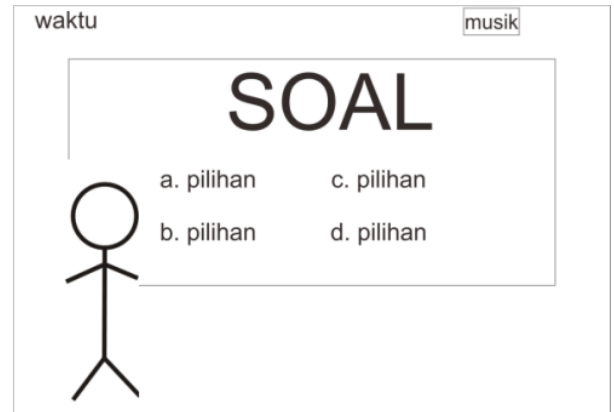


Figure 4.7. Question Display Design

f. Home Evaluation Display Design/Quis

Once the user is given materials about the kingdom of Islam in Indonesia, to know how can the instructional media used as a substitute teacher in explaining the matter, there is an evaluation. There are 2 kinds of evaluation questions on subjects of Citizenship Education (Civics) and the problem of the Indonesian subjects. Before the user enters the evaluation page, the user showed a page that initial / home user / user must fill / fill the data first, the data to be filled include number, name and class. If the user feels confuse for evaluation, then the media facilitates the form of a tutorial or instructions for use when working on evaluation.



Figure 4.6. Home Evaluation Display Design

g. Question of Display Design

This page contains information about the question / evaluation is given to the user after listening / reading material. Question is given in the form of multiple choice, each item is given 2 minutes for the user to answer, if within 2 minutes the user can

h. Result of Display Design

This page is the most awaited by all users / students, because these pages provide information such as the value obtained from the evaluation that has been done. On this page provided three other menus, they are key answer, the answer of the evaluations that have been done (history) and repeat the evaluation.

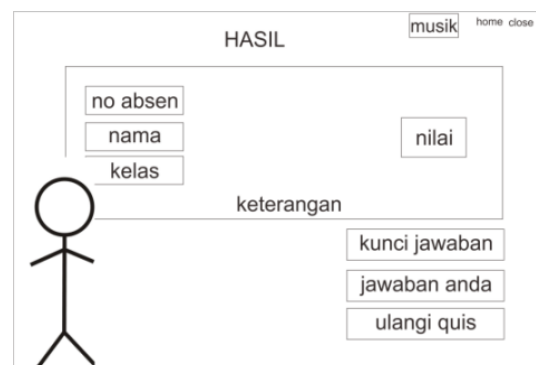


Figure 4.8. Result of Display Design

i. An Answer Display Design

At this page provides a history of the answers that have been made in the previous evaluation. This is to determine where the fault lies.

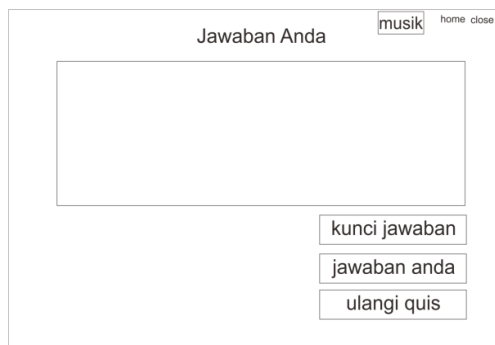


Figure 4.9. An Answer Display Design

j. Answer key Display Design

On this page of the media provide an answer key from the questions used as evaluation, this is to allow a user / student to learn independently.

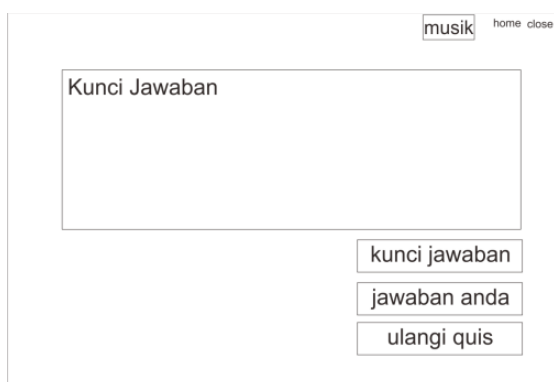


Figure 4.10. Answer Key Display Design

4. Media Learning Test

The trial was conducted to determine instructional media learning implementation, the response of teachers, student responses, and thoroughness when learning to use the media Bolang adventure game. In addition, testing was conducted to determine the effectiveness of learning using media picture using the Bolang media adventure game.

Product trials conducted at SDN 2 Padokan en SD Muhammadiyah Ambarbinangun. This research was conducted on April 9, 2015 through May 31, 2015. This study used two classes as an experimental class and control class. Two classes are selected which have similar characteristics. Subjects used is the class VB and VC SD N 2 Padokan en and class VA and VB SD Ambarbiangun Poor Bantul Muhammadiyah Yogyakarta.

After receiving the data motivation and achievement then researchers conducted analyzes whether there are significant differences in motivation and learning achievement by using instructional media adventure games Si Bolang

(experimental class) and use the media image (control group).

DISCUSSION

Analysis of the effectiveness of the product is done to test the following hypothesis.

a. Game media effects on learning achievement

H0: there is no significant difference in learning achievement between classes taught by b. media picture and media game in the fifth grade elementary school students in Kasihan the school year 2014/2015.

Ha: There is a significant difference in learning achievement between classes taught by media picture and media game in the fifth grade elementary school students in Kasihan the school year 2014/2015.

b. Game media effect on motivation to learn

H0: there is no significant difference in learning motivation between classes taught by media picture and media game in the fifth grade elementary school students in Kasihan the school year 2014/2015.

Ha: There is a significant difference in learning motivation between classes taught by media picture and media game in the fifth grade elementary school students in Kasihan the school year 2014/2015.

Before testing the hypothesis, it is necessary to test the prerequisite prasyarat.Uji used in this study is a test for normality and homogeneity test.

a. Normality Test

Normality test is done to test the assumption, if the data distribution of the experimental group and the control group to form a normal distribution or not. Normality test calculations in this study conducted by Kolmogorov-Smirnov test for normality with facilities SPSS 16.00 for windows. The hypothesis proposed to measure the normality of this is as follows.

H0 = Data distribution is not normal

Ha = normally distributed data

The testing criteria used to measure the normality of the population in this study is Ha accepted if nilaiSig. (2-tailed) over the level of alpha set. The alpha value is set at 5% (0.05). The following table presents a summary of the results of tests of normality in group control class and experimental class with methods of the Kolmogorov-Smirnov with facilities SPSS 16.00 for windows.

Table 9. Result of the normality test

	Tests of Normality					
	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
media	Statistic	df	Sig.	Statistic	df	Sig.
motivasi	.122	43	.108	.976	43	.510
media gambar						
media game	.160	44	.006	.881	44	.000
petualangn si bolang						
nilai	.158	43	.009	.903	43	.002
media gambar						
media game	.125	44	.083	.926	44	.008
petualangn si bolang						

a. Lilliefors Significance Correction

Based on the table above, it appears that the value of Sig. (2-tailed) Data motivation by using media picture have significansi value > 0.05 then Ho is rejected means the normal distribution of data .. While the motivation of data using the media adventure game Bolang <0.05, so Ho accepted means of data distribution is not normal , As for the data values using media picture <0,05 so Ho accepted means data is not normally distributed. For data values using the media adventure game Bolang > 0,05 so Ho were rejected means normal distribution of data.

b. Homogeneity test

Homogeneity test is used to determine whether some of the variants have data yanng same group or not. Homogeneity test calculations performed using Levene's homogeneity with SPSS 16.00 for windows. The hypothesis of homogeneity is as follows.

H0 = group variant is not the same

Ha = group variant is the same

The testing criteria are used to determine the homogeneity of variance in this study is Ha accepted if the Sig. (2-tailed) > of the specified alpha level of 5% (0.05). Table 9 below presents a summary output Test of homogeneity of variance in the experimental group and the control group.

**Table 10. Homogeneity Test
Test of Homogeneity of Variances**

	Levene			
	Statistic	df1	df2	Sig.
achievement	.002	1	85	.962
motivation	.009	1	85	.073

Based on Table 10 above shows a significance level of motivation is above 0.05 is 0.73, while the significance value was 0.962. It can be said H0ditolak and Haditerima.Jadi, it can be concluded that the significance level of 5% of all groups used in this study has a variance homogenous group.

c. Hypothesis Test

In this study, there are two hypotheses used, namely

1. Media effects of learning games and media picture in improving learning achievement in elementary school fifth grade of primary school students in Kasihan academic year 2014/2015.

2. Media effects of learning games and media picture in increasing motivation in class V SD in Kasihan the academic year 2014/2015.

Under the prerequisite test, both the data homogeneous but not normal so that the analytical techniques used are non-parametric. Type of hypothesis test is a statistical test used non-parametric Mann-Whitney U-test.

- a. The media effect of adventure game si Bolang on achievement

H0: no difference in learning achievement using game media and media picture on fifth grade of primary school students in academic year 2014/2015 Kasihan.

Ha: there is a difference in learning achievement using game media and media picture on fifth grade of primary school students in academic year 2014/2015 Kasihan.

- b. The media effect of adventure si Bolang on motivation

H0: there is no significant difference in learning motivation between classes taught by media picture and media game in the fifth grade elementary school students in Kasihan academic year 2014/2015.

Ha: there is significant difference in learning motivation between classes taught by media picture and media game in the fifth grade elementary school students in Kasihan the academic year 2014/2015.

The decision-making criteria are H0 is rejected when the Sig. (2-tailed) < of the level of alpha set at 5% (0.05). The following table presents a summary output Mann-Whitney Test achievement and motivation to learn in a class taught by gaming media and media picture.

Table 11 Mann-Whitney Test

	achievement	motivation
Mann-Whitney U	816.000	80.000
Wilcoxon W	1806.000	1026.000
Z	-1.118	-7.378
Asymp. Sig. (2-tailed)	.263	.000

Based on the test results of the Mann-Whitney U-Test above, the significance known that the achievement is 0.263. Value significance of this achievement > of 0.05 so that Ho accepted, which means there is no difference in learning achievement between students who are taught by media picture and the students are taught with the Bolang media adventure game. While the significance of motivation value is 0,000. The value is <0,05 so that Ho is rejected, it means that there are differences in learning motivation among

students who are taught by media picture and the students are taught with the Bolang media adventure game. Furthermore, based on descriptive analysis can be seen that the mean motivation by using media picture is 24.67. While the motivation mean using the Bolang media adventure game is 33.32. All in all the difference it can be concluded that the adventure game Bolang media more effectively increase motivation in comparison to media picture. This is because the Bolang media adventure game have a concept design of the Bolang adventure event that was already proven attractive for elementary students. In addition the concept of learning with computer games media is a new thing for students, so that students become highly motivated to participate in learning.

3. Review

Bolang as a media adventure game show differences in motivation when compared with media picture. It shows that the Bolang adventures game is interesting for students. Therefore the adventurous game Bolang media is still less effective for improving learning achievement. Media game did not show differences with media picture in the aspect of performance improvement. That is because the characteristics of the Bolang adventures game media which have a greater visual proportions. Media si Bolang adventure game with media picture, has the same characteristics that visual media. So there is no differences when using media picture and media adventure games si Bolang.

In addition to classroom experiment test directly at the computer which the students are many who rush to answer regardless of the question carefully. In further research performance evaluation tests were not included in the game program but can ditekankan in writing.

CONCLUSION

Based on the results of research and discussion, it can be concluded as follows.

1. The design of game-based learning media education that matches the theme 7 History of Civilization Indonesia Sub Theme 1 Kingdom of Islam in Indonesia and interesting for students of class V SD is an adventure game with the design of the Bolang. Design and development of the Bolang media adventure game in thematic learning classroom VA SD se-Kasihan Bantul conducted and through six stages, namely: needs analysis, instructional planning, media product development, product testing, analysis of results, review.
2. Based on data analysis with Mann-Whitney U-test experimental class and control class, it can be concluded that there is no significant difference in learning achievement with Si Bolang media adventure games and media

picture in the fifth grade students in Kasihan Bantul elementary school year 2014/2015 , with a significance value = 0.263

3. Based on data analysis with Mann-Whitney U-test on the experimental class and control class, it can be concluded that there is a significant difference in learning motivation using Si Bolang adventures media and media picture on fifth grade students in Kasihan Bantul elementary school academic year 2014/2015 , with significansi value = 0.000. Adventure games si Bolang media more effective to increase the motivation to learn in comparison to media picture. It can be seen from the mean motivation to use the media Bolang adventure game is 33.32. While the mean motivation by using media picture is 24.67.

ACKNOWLEDGMENT

This study can not be separated from the support of various side. The researchers would like to thank profusely the PGRI University of Yogyakarta, especially LPPM, all principals, teachers and students of SD Muhammadiyah Ambarbinangun and SDN 2 Padokan en, students who have helped this research, as well as editors and reviewers of the Cakrawala journal of education which has posted the results of this research.

REFERENCES

1. A.M, Sardiman. 2003. *Interaksi dan Motivasi Belajar Mengajar*. Jakarta: Raja Grafindo Persada.
2. Anggra, 2008. *Memahami Teknik Dasar Pembuatan Game Berbasis Flash*. Yogyakarta: Gava Media.
3. Azhar Arsyd. 2010. *Media Pembelajaran*. Jakarta: Raja Grafindo Persada.
4. Hamzah B Uno. 2006. *Teori Motivasi dan Pengukurannya: Analisis di Bidang Pendidikan*. Jakarta: Bumi Aksara.
5. Hurd, Daniel dan Jenuings, Erin. 2009. *Standardized Educational Games Ratings: Suggested Criteria*. Karya Tulis Ilmiah.
6. Mulyani Sumantri dan Johar Permana. 2001. *Strategi Belajar Mengajar*. Bandung: Maulana
7. Nana Sudjana dan Ahmad Rivai. 2005. *Media Pengajaran*. Bandung: Sinar Baru Algensindo.
8. Ngalim Purwanto, *Psikologi Pendidikan*, 2006, Bandung: Remaja RoSDakarya Offset.
9. Rohani Ahmad. 1990. *Pengolahan dan Pengajaran*. Jakarta: Rineka Cipta. Jakarta.
10. Seels & Glasgow. 1990. *Exercises in Instructional Design*. Columbus: Merrill Publishing Company.

11. Sumadi Suryabrata. 2006. *Psikologi Pendidikan*. Jakarta: Raja Grafindo Persada.



CERTIFICATE

This certificate is awarded to

Sunarti
(As Presenter)

In recognition of valuable contributions to

**The 1st International Conference on Elementary School
Teacher Education (ICESTE)**

Jakarta, Indonesia, on October 12nd - 13rd, 2015

Jakarta, October 13rd 2015

Rector of State University of Jakarta

Prof. Dr. Djaali

Chairman of Organizing Committee

Dr. Ir. Arita Marini, ME

Organized by:
Elementary School Teacher
Education Department
The State University of Jakarta



UNIVERSITY OF
SWAZILAND